

REMARKS/ARGUMENTS

Claims 1 and 8 remain in this application. Claims 2, 3 and 19 have been canceled. Claims 4-7, 9-18, and 20-22 have been amended. No new matter has been added.

Reconsideration of the rejection of Claims 9, 12, 13 and 16 under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention, is requested, in light of the following arguments.

Claims 9,12, 13 and 16 have been amended in response to the Examiner's kind suggestions.

Claims 2-6, 9 and 18-22 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim have been amended. Claims 2 and 3 have been cancelled for reasons pointed out by the Examiner, no new matter has been entered. Claims 4-6 and 18-22 have been amended. Claim 19 has been cancelled because the limitations have been combined with Claim 18.

Allowance of all Claims is therefore respectfully requested.

We have reviewed the related art references made of record and agree with the

Examiner that none of these suggest the present claimed invention.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned.

“Version with markings to show changes made.”

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Please cancel claims 2 and 3.

25 4. (AMENDED) The interlocking assembly [according to] of Claim 1
further comprising [wherein said metal injection molding of a hollow structure
has provided a tapered recess with] self locking attributes for removably securing
[the] said permanent magnet without use of fasteners or adhesives.

30 5. (AMENDED) The interlocking assembly according to Claim 1 wherein
said metal injection molding of [a] said hollow structure provides [a] reduction of
a gap dimension between [the] said magnet and plate thereby [permitting]
producing a more intense magnetic flux [between the] in said gap.

35 6. (AMENDED) The interlocking assembly according to Claim 1 wherein
said metal injection molding of [a] said hollow structure [has] provide[d]s a
structurally superior voice coil motor.

7. (AMENDED) An interlocking assembly of a voice coil motor for a hard
disk drive, said assembly comprising:
an arcuate shaped base member with a top surface and a bottom
surface, said base member having a pair of upright columns molded

to said top surface, said upright columns disposed at each end of said base member, a molded tapered recess formed on said top surface between said upright columns, said recess ingressing from a convex edge of said base and narrowing while extending opposite towards a concave edge, said tapered recess having side edges shaped to tightly receive and interlocking with;

45 a flat arcuate shaped permanent magnet having dovetail side edges to slidely interlock with said tapered recess of said base member[;], and an arcuate shaped cover plate.

30 9. (AMENDED) The interlocking assembly according to Claim [7] 8 wherein said metal injection molding of said arcuate base member provides [a] reduction of a gap between [the] said magnet and plate thereby [permitting] providing a more intense magnetic flux [betweecn the] in said gap.

10. (AMENDED) An interlocking assembly of a voice coil motor for a hard disk drive, said assembly comprising:

an arcuate shaped base member formed by metal injection molding, said base member with a top surface and a bottom surface, a molded tapered and truncated recess formed centrally on said top surface, said recess ingressing from a convex edge of said base and narrowing while extending opposite towards a concave edge, forming a truncated recess, said recess having side edges shaped to tightly receive and to interlock with;

a flat arcuate shaped permanent magnet having dovetail side edges to

slidely interlock with said tapered recess of said base member;
an arcuate shaped cover plate having a pair of molded down-reaching
75 columns, said columns disposed under and at each end of said
base member[;].

11. (AMENDED)The interlocking assembly of [according to] Claim 10
further comprising [wherein]said arcuate shaped cover plate with said pair of
[said] upright columns is formed by metal injection molding, thus integrating
three of four structural elements of a standard voice coil motor [thereby] while
reducing inventory management.

12. (AMENDED)The interlocking assembly according to Claim [10] 11
wherein said metal injection molding has provided [a] said tapered recess with
self locking attributes for removably securing [the] said permanent magnet
without [the use of] using fasteners or adhesives.

13. (AMENDED) The interlocking assembly according to Claim [10] 11
wherein said metal injection molding of said arcuate base member provides [a]
reduction of a gap between [the] said magnet and plate thereby [permitting]
providing a more intense magnetic flux [between the] in said gap.

14. (AMENDED)An interlocking assembly of a voice coil motor for a
hard disk drive, said assembly comprising:
95 an arcuate shaped base member with a top surface and a bottom
surface, said base member having an upright column molded to said top

surface, said upright column disposed at one end of said base member, a molded tapered and truncated recess formed centrally on said top surface, said recess ingressing from a convex edge of said base and narrowing while extending opposite towards a concave edge[,] forming a truncated recess, said recess having side edges shaped to tightly receive and to interlock with[;],

a first flat arcuate shaped permanent magnet having dovetail side edges to slidely interlock with said tapered recess of said base member;

105 an arcuate shaped cover plate with a top surface and a bottom surface, said cover plate having a down-reaching column molded to said bottom surface, said column disposed under and opposite end of said column disposed on base member; said cover plate including a molded tapered and truncated recess formed centrally on surface, said recess ingressing from a convex edge of said cover plate and narrowing while extending opposite towards a concave edge, forming a truncated recess, said recess having side edges shaped to tightly receive and to interlock with;

110 a second flat arcuate shaped permanent magnet having dovetail side edges to slidely interlock with said tapered recess of said base member[;].

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15. (AMENDED) The interlocking assembly of [according to] Claim 14 further comprising [wherein] said arcuate shaped cover plate and said arcuate shaped base member, each with a supporting column, are formed by metal injection molding thus integrating four structural elements of a standard voice coil motor thereby reducing inventory management.

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16. (AMENDED) The interlocking assembly according to Claim [14] 15 wherein said metal injection molding has provided a tapered recess with self locking attributes for removably securing the permanent magnet without the use of fasteners or adhesives.

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17. A method for interlocking an assembly of a voice coil motor for a hard disk drive, comprising the steps of:

providing an arcuate shaped hollow structure formed by metal injection molding, said hollow structure including a bottom plate member separated from a top plate member by a pair of upright members disposed therebetween, said upright members joining with inside surfaces of said plate members are disposed at each end of said hollow structure, a tapered recess formed into the inside surface of said bottom plate, said recess ingressing from a convex edge of said bottom plate and narrowing while extending through to an opposite concave edge, said tapered recess having side edges shaped to tightly interlock with a dovetail shaped member, and

providing a flat arcuate shaped permanent magnet having dovetail side edges to slidely interlock with said tapered recess of said bottom plate of said hollow structure.

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18. (AMENDED) The interlocking method [according to] of Claim 17 further comprising [wherein], said metal injection molding of a hollow structure has integrated four structural [elements] parts of a standard voice coil motor [and] therefore, eliminating the need for fasteners or adhesives while reducing

[eliminated] inventory management [for separate] of said individual structural parts.[.]

Please cancel claim 19.

20. (AMENDED) The interlocking method according to Claim 17 wherein said metal injection molding of a hollow structure [eliminating assembly with adhesives] eliminates [the] all failure problems associated with [defective] adhesion adhesives, such as, adhesive failure between individual parts, long term effects of outgassing, and [controlling the] adhesive spillover [within] at the outside [boundaries of the parts] edges.

21. (AMENDED) The interlocking method according to Claim 17 wherein said metal injection molding [of a hollow structure has] provides[d] a tapered recess with self locking attributes for removably securing the permanent magnet without fasteners or adhesives.

22. (AMENDED) The interlocking method according to Claim 17 wherein said metal injection molding of a hollow structure provides reduction of a gap between [the] said magnet and plate thereby [permitting] providing a more intense magnetic flux [between the] in said gap.